

REMARKS

Claims 1 and 3-19 are pending in the present application. With entry of this Amendment, Applicants hereby cancel claims 1-5 and 7 and amend claims 6 and 8. Reexamination and reconsideration are respectfully requested.

A. Objection To Abstract

The Examiner objected to the amendment to the Abstract for failing to include a clean, unmarked copy of the amendment. Applicants have reviewed the section – 37 C.F.R. 1.121(b)(1) – that the Examiner cites, but the Applicants respectfully submit that a clean, unmarked copy of an amendment is not required in this case. Section 1.121(b)(1)(iii) requires a clean, unmarked copy for a *newly added* paragraph. However, an amended paragraph – as in the case of the Abstract in the present application – is shown marked-up, as was done in the previous response. Accordingly, Applicants request either that the objection be withdrawn or further clarification from the Examiner as to his objection.

B. Amendments To The Claims

Applicants have made a number of amendments with respect to the three independent claims: claims 1, 6 and 8.

1. Claim 1

Claim 1 and its pending dependent claims 3-5 have been canceled.

2. Claim 6

Claim 6 has been amended in four ways. First, the recitation “a power transmission device coupling the input shaft with the output shaft” has been amended to recite “a power transmission device *including a gear set configured to couple* the input shaft with the output shaft.” This

amendment is supported by the present application including, without limitation, at page 5, lines 24-35.

Second, to clarify the claimed invention, the recitations of “first housing member,” “second housing member,” and “third housing member” in claim 6 have been amended to a “main body,” “first cover,” and “second cover,” respectively. Support for this amendment is found in the present application including, without limitation, Fig. 1. Fig. 1 shows a main body 35, a right cover 39 and a rear cover 43. This amendment is made to more clearly differentiate the main body (which is a single unitary body) from the recited covers, and to emphasize the separate elements of a main body and covers as discussed in more detail below.

Third, claim 6 has been amended to recite “the first cover supporting the other of the third bearings, and the second cover supporting the other of the second bearings.” This recitation is supported by the present application including, without limitation, at page 5, lines 7-19 and page 6, line 29 to page 7, line 2.

Finally, claim 6 has been amended to recite “wherein the housing member is so dimensioned that a first housing chamber defined by the main body and the first cover houses the first change direction gear and the pair of third bearings, and a second housing chamber defined by the main body and the second cover houses the input shaft, the pair of first bearings, the output shaft, the pair of second bearings, and the power transmission device, whereby the housing member positions the first change direction gear, the second change direction gear, the input shaft and the output shaft in place.” This recitation is supported by the present application including, without limitation, at page 4, line 32 to page 5, line 6; page 6, line 29 to page 7, line 2; and page 8, line 17 to page 9, line 3.

3. Claim 8

Claim 8 has been amended to clarify that, in addition to the main body, the casing includes two covers. There is a “a first cover for covering the main body so as to house the first change-direction gear in the casing,” and there is “a second cover for covering the main body so as to house the first gear, the second gear and the third gear in the casing, whereby the casing positions the first change direction gear, the second change direction gear, the first gear, the second gear and the third gear in place.” These recitations are supported by the present application including, without limitation, at page 11, line 28 to page 12, line 13; page 13, line 31 to page 14, line 6; page 14, line 31 to page 15, line 3; page 15, lines 10-17 and Fig 3.

C. Rejection Under § 112, First Paragraph

The Examiner rejected claims 1 and 3-19 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

The Examiner was uncertain as to which embodiment supported a main body being a “single unitary body.” Applicants respectfully submit that the recitation is supported by at least the first and third embodiments. In Fig. 1, directed to the first embodiment, the main body 35 is a single unitary body as shown by the hatch marks. This has been acknowledged by the Examiner in the present Office Action as a result of the interview in April 2009. Similarly, Fig. 3 – directed to the third embodiment – illustrates a main body 261 being a “single unitary body.”

To further clarify the claimed invention, Applicants have amended claims 6 and 8 (as discussed above) to emphasize that the single unitary main body is separate from the recited first and second covers. These recitations are supported by Figs. 1 and 3 which show separate right and rear covers 39 and 43 (Fig. 1) and case covers 267 and 269 (Fig. 3.) It appears from the Examiner’s

rejection that he may have been considering these elements as part of the main body. It is believed that these amendments to claims 6 and 8 clarify the invention and overcome the rejection under § 112, first paragraph.

Furthermore, in response to the Examiner's suggestions, Applicants have amended the specification to add the following paragraph: "Throughout the specification and accompanying claims, the phrase a 'single unitary body' is to be interpreted as a single body attaining unity without any fastening means." It is believed that this addition is fully supported by Figs. 1 and 3 and the Examiner's statements in the Office Action, and that no new matter has been added.

D. Rejection Under § 103: Claim 6

The Examiner rejected pending claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi (U.S. Publication No. 2002/0078792) in view of Krauss (U.S. Patent No. 4,188,833).

This rejection is respectfully traversed, as the references fail to disclose or suggest "a housing member for housing the input shaft, the output shaft, the first bearings, the second bearings, the third bearings and the power transmission device, the housing member including a main body formed in a single unitary body, a first cover, and a second cover, the main body supporting one of the first bearings, one of the second bearings, and one of the third bearings, the first cover supporting the other of the third bearings, and the second cover supporting the other of the second bearings, wherein the housing member is so dimensioned that a first housing chamber defined by the main body and the first cover houses the first change direction gear and the pair of third bearings, and a second housing chamber defined by the main body and the second cover houses the input shaft, the pair of first bearings, the output shaft, the pair of second bearings, and the power

transmission device, whereby the housing member positions the first change direction gear, the second change direction gear, the input shaft and the output shaft in place.”

From the Office Action, at pages 6 and 7, it appears that the Examiner considers that shafts 31a and 35 of Kobayashi meet the recited input and output shafts. Moreover, the Examiner cites to various bearings and a power transmission device 32/33 as meeting the recited bearings and power transmission device of claim 6. Fig. 1 of Kobayashi illustrates that these members are housed in plural, at least three, separable members: a transfer case 9, a casing adjacent to and below the transfer case 9, and another casing further below this casing. However, all of these members are *casings*. That is, these members do not meet “*the housing member including a main body formed in a single unitary body, a first cover, and a second cover*” as recited in amended claim 6. Specifically, if the transfer case 9 is stated as meeting the claimed “*main body*,” the casing adjacent to the case 9 cannot be construed as a cover and therefore these housing members lack any of “*the first cover*” and “*the second cover*” as claimed. One of ordinary skill in the art would not consider these casings in Kobayashi as being “covers” based on the ordinary technical meaning of “cover.”

Krauss does not make up for the deficiencies of Kobayashi. Krauss discloses only one cover and therefore fails to disclose a second cover, much less a second housing chamber defined by a main body and the second cover. Similarly, Hideyo fails to show a first cover supporting the other of third bearings which rotatably supports a first change-direction gear.

Moreover, there would be no reason to make the combination proposed by the Examiner when one considers the art and the skill in the art. Factors such as the “type of problems encountered in the art” and “prior art solutions to those problems” are typically considered in determining the skill in the art. (See, e.g., M.P.E.P. 2141(II)(C).)

The current invention pertains to a transfer case of a vehicle (such as an automobile), and a gear mechanism therewith. In this field, there has been a problem as to how gear teeth contact can be regulated, because existing transfer cases or transaxles have required a complex structure for installation of gears and regulation of teeth contact among the gears. Indeed, many prior art references, such as JP 04-249656 (Masaharu) filed in an IDS on October 7, 2005, point out this problem.

Masaharu states that, in existing transaxles, plural gears including a reduction gear unit, a differential unit, a driving bevel gear and a driven bevel gear are respectively installed into *plural cases*. The reason for utilizing plural cases – instead of a single case – was that these plural gears must have sufficient dimensions so as to bear relatively large driving forces and then transmit high-speed rotation as necessary. It would be difficult to produce a case of a single unitary body which would support such plural large-sized gears.

According to knowledge of one skilled in the art, it would have been the conventional approach to produce the case to be divisible into plural cases and make these cases respectively support these gears. Kobayashi is a typical example.

However, the prior art solution had drawbacks which the present invention addresses. As stated in Masaharu, assembly of a transaxle would include: temporarily assembling the cases without the gears therein; next carrying out precise machining on the temporarily assembled cases so as to precisely position the gears to be installed therein; next disassembling the cases and installing the gears respectively into the disassembled cases; and finally again assembling the cases with the gears installed therein. Otherwise, the gears would not be able to establish regular teeth

contact, thereby failing to rotate and transmit force. This prior art solution required great labor and cost given the laborious assembly steps.

Other solutions also had problems. Palazzolo (cited by the Examiner) sought to employ a chain 118 for coupling a shaft 124 with a shaft 164 instead of a gear set so as to omit means for regulating teeth contact between these shafts. However, such chain coupling takes up much room (see his drawings, in which shafts 124 and 164 are disposed apart) and thus necessarily makes the device unnecessarily large.

In view of the above, the claimed subject matter would not have been obvious over the cited references. First, modification is required to reach the claimed subject, but there would *not* be any reason to carry out such modification in the references and general knowledge available to one skilled in the art. For example, formation of the main body of the case to be a single unitary body is contrary to the above-identified general knowledge of one skilled in the art. Moreover, Palazzolo's solution would not motivate one skilled in the art to carry out the modification, because Palazzolo necessarily requires a chain instead of a gear and thus a further modification would be needed to replace the chain with the gear set to reach the claimed subject matter.

Moreover, the claimed subject matter of claim 6 has many benefits. The *single unitary* main body with two *covers* house and support all the gears including the change-direction gear set and the other gear set configured to couple the input shaft with the output shaft. This configuration prominently facilitates assembly of these elements. When a person assembles these elements, it is not necessary to temporarily assemble plural cases and then machine the assembled cases as required in the prior art. All that is required is to individually machine the main body of a single unitary body and the first and second covers. Further the disassembly step and the re-assembly step

as required in the prior art can be further omitted. All that is required is to 1) install the first change direction gear with the third bearings into the main body and then cover the main body with the first cover; and 2) install the input shaft, the first bearings, the output shaft, the second bearings, and the power transmission device into the main body and then cover the main body with the second cover. Then the gears are positioned in place so as to establish mutual engagement and therefore elaboration of assembly and regulation of teeth contact are prominently reduced.

Further, the claimed subject enables easy handling of the assembled device because positions of the gears and the shafts of the claimed subject are not affected by external devices. In Kobayashi, for example, the position of the first direction changing gear 30 is affected by the position of the adjacent device including differential 5 (see Fig. 1). When the position of the differential 5 is changed, all the elements must be subject to re-positioning. In contrast, the claimed subject does not have such a rigid positional relation with adjacent devices.

Accordingly, for the reasons set forth above, claim 6 is not anticipated or obvious in view of Kobayashi alone or in combination with Krauss and/or Hideyo.

D. Rejection Under § 103: Claim 8

The Examiner rejected claim 8 under § 103(a) as being unpatentable over Kobayashi in view of Hideyo and Krauss. The rejection is respectfully traversed

Amended claim 8 recites "*a first cover for covering the main body so as to house the first change-direction gear in the casing, and a second cover for covering the main body so as to house the first gear, the second gear and the third gear in the casing, whereby the casing positions the first change direction gear, the second change direction gear, the first gear, the second gear and the third gear in place*".

Kobayashi fails to disclose “*a first cover for covering the main body so as to house the first change-direction gear in the casing*” and “*a second cover for covering the main body so as to house the first gear, the second gear and the third gear in the casing*” as required in amended claim 8 for the reasons discussed above. Krauss and Hideyo are similarly deficient, and it would not have been obvious to combine these references for the reasons discussed above.

Accordingly, claim 8 is not anticipated or obvious in view of Kobayashi alone or in combination with Krauss and/or Hideyo.

E. Rejection Under § 103: Claims Dependent From Claim 8

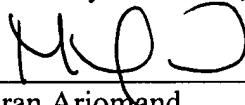
Claims 9-19 are patentable over the references for at least the reasons set forth above with respect to claim 8.

If, for any reason, the Examiner finds the application other than in condition for allowance, Applicants respectfully request that the Examiner contact the undersigned attorney at the Los Angeles telephone number (213) 892-5630 to discuss any steps necessary to place the application in condition for allowance.

In the event the U.S. Patent and Trademark Office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to Deposit Account No. 03-1952 referencing Docket No. 482782007600. However, the Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

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Respectfully submitted,

By 
Mehran Arjomand

Registration No.: 48,231
MORRISON & FOERSTER LLP
555 West Fifth Street
Los Angeles, California 90013-1024
(213) 892-5630